

WHAT IS CLAIMED IS:

1. A network system having STAR topology comprising:  
a hub site; and  
at least one remote site;

wherein call control and management between the hub site and the remote site use Internet Protocol (IP) addressing and HDLC addressing at the link level for identification thereby allowing only a desired remote site to read data transmitted.

2. The network system of Claim 1 further comprising a plurality of remote sites.

3. The network system of Claim 2 further comprising:  
a first communication channel to transmit data to the plurality of remote sites; and

a plurality of second communication channels to transmit data from the plurality of remote sites to the hub.

4. The network of Claim 1 wherein the hub site comprises:  
a first IP modem for receiving and transmitting data to  
and from the hub site and for maintaining a network database; and  
at least a second IP modem for receiving data from a  
remote site.

5. The network of Claim 1 wherein the at least one remote  
site comprises a remote modem for continuously receiving data from  
the hub site and for transmitting data when required.

6. A network system comprising:  
a hub site;  
a plurality of remote sites; and  
a satellite for transmitting data to and from the hub  
site and the remote site;

wherein call control and management between the hub site  
and the remote site use Internet Protocol (IP) addressing and HDLC  
addressing for identification.

7. A network system in accordance with Claim 6 wherein  
the plurality of channels comprises:

a first communication channel to transmit data to the  
plurality of remote sites; and

a plurality of second communication channels to transmit  
data from the plurality of remote sites to the hub.

8. The network of Claim 7 wherein the hub site comprises:  
a first IP modem for receiving and transmitting data to  
and from the hub site and for maintaining a network database; and  
at least one second IP modem for receiving data from a  
remote site.

9. The network of Claim 7 wherein each of the plurality  
of remote sites comprises a remote modem for continuously receiving  
data from the hub site and for transmitting data when required.

10. The network of Claim 7 wherein the data base stored  
in the first IP modem maintains a listing of all the plurality of  
channels in the network; a listing of destination IP addresses and  
destination HDLC addresses for each of the plurality of channels;  
a listing of a guaranteed minimum available bandwidth of each of  
the plurality of channels and a listing of a maximum allowable  
bandwidth of each of the plurality of channels.

11. The network of Claim 10 wherein the data base stored  
in the primary network control modem maintains a listing of  
encryption capability of each channel.

12. A network system having STAR topology and which allows on demand single hop connectivity between remote sites comprising:

a hub site;

a plurality of remote sites;

a first channel for sending data from the hub site to all of the plurality of remote sites;

a plurality of second channels for transmitting data from each of the plurality of remote sites to the hub site and for transmitting data between the plurality of remote sites;

wherein call control and management between the hub site and the remote sites and between different remote sites use Internet Protocol (IP) addressing for identification.

13. The network of Claim 12 wherein the hub site comprises:

a first IP modem for receiving and transmitting data to and from the hub site and for maintaining a network database;

at least a second IP modem for receiving data from a remote site; and

a single hop server for configuring channels to transmit data directly between different remote sites.

14. The network of Claim 12 wherein each of the plurality of remote sites comprises:

a first remote modem for continuously receiving data from the hub site and for transmitting data when required; and

a second remote modem for receiving data sent from a different remote site.

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15. A method for allowing a network system having STAR topology to perform on demand single hop connectivity between remote sites comprising the steps of:

providing a single hop server at a hub site of the network system;

providing a first remote modem at each remote site for continuously receiving data from the hub site and for transmitting data when required;

providing a second remote modem at each remote site that receives data from a second remote site for receiving data sent from a different remote site;

configuring the network so call control and management between the hub site and the remote sites and between different remote sites use Internet Protocol (IP) addressing for identification; and

configuring a direct channel between remote sites that are communicating to transmit the data.

16. The method of Claim 15 wherein the step of configuring a direct channel between remote sites that are communicating comprises the steps of:

sending a signal from a first remote site to the hub site requesting a single hop connection to a second remote site;

checking by the hub site to see if the second remote site is tuned to a carrier being transmitted by the first remote site;

selecting an HDLC address from an available range;

configuring the second remote site to add the selected IP HDLC address for receiving data; and

configuring the first remote site to start using the selected IP HDLC address.

17. The method of Claim 15 wherein the step of configuring a direct channel between remote sites that are communicating comprises the steps of using an existing HDLC address when the second remote site is configured to receive a maximum number of HDLC addresses.

18. The method of Claim 15 further comprising the step of monitoring for a timeout to determine an end of transmitting data.

19. The method of Claim 15 wherein the single hop server can preempt an existing connection to allow a higher priority connection to proceed.

20. The method of Claim 15 wherein the single hop server can queue a request until a remote modem at a desired remote site becomes available.

21. The method of Claim 15 wherein the network system seamlessly changes topology to support application demand without human intervention and without causing loss of connectivity for current traffic.

22. The method of Claim 15 wherein the single hop server can dynamically adjust transmit power of a carrier for single-hop remote to remote connection to compensate for smaller antenna size at the remote sites.